

Preliminary Amendment

Applicant: Daniel R. Marshall

Serial No.: Unknown (Parent Serial No.: 09/710,161)

Filed: Herewith (Parent Filing Date: November 8, 2000)

Docket No.: 10002305-3

Title: SWALLOWABLE DATA RECORDER CAPSULE MEDICAL DEVICE

IN THE CLAIMS

Please cancel claims 1-20 and 23-37 without prejudice.

Please add claims 38-56 as follows:

Claims 1-20 (Canceled)

21. (Previously presented) A swallowable data recorder medical device comprising:
a capsule including:
a sensing module for sensing a biologic condition within a body, the sensing module including a video receiver, wherein sensing the biologic condition includes the video receiver receiving video of the biologic condition;
a recording module including an atomic resolution storage device, the recording module electrically coupled to the sensing module for recording data representative of the sensed biological condition, in the atomic resolution storage device; and
a power supply coupled to the recording module.

22. (Previously presented) The device of claim 21, wherein the sensing module further includes an illumination source.

Claims 23-37 (Canceled)

38. (New) The device of claim 21, wherein the sensing module provides an output signal representative of the sensed biological condition, and the recording module includes a controller for receiving the output signal from the sensing module.

39. (New) The device of claim 38, wherein the controller performs one or more logical operations using the output signal, and selectively provides output data to the atomic resolution storage device based upon the logical operations.

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40. (New) The device of claim 21, wherein the recording module includes programmable logic.

41. (New) The device of claim 40, wherein the programmable logic is located on the atomic resolution storage device.

42. (New) The device of claim 21, wherein the atomic resolution storage device further comprises:

a field emitter fabricated by semiconductor microfabrication techniques capable of generating an electron beam current; and

a storage medium in proximity to the field emitter and having a storage area in one of a plurality of states to represent the information stored in the storage area via the field emitter, representative of the sensed biological condition.

43. (New) The device of claim 42, wherein an effect is generated when the electron beam current bombards the storage area, wherein a magnitude of the effect depends upon the state of the storage area, and wherein the information stored in the storage area is read by measuring the magnitude of the effect.

44. (New) The device of claim 42, further comprising:

a plurality of storage areas on the storage medium, with each storage area being in one of the plurality of states to represent the information stored in the storage area; and

a microfabricated mover in the storage device to position different storage areas to be bombarded by the electron beam current.

45. (New) The device of claim 44, further comprising:

a plurality of field emitters, with each emitter being fabricated by semiconductor microfabrication techniques capable of generating an electron beam current, the plurality of field emitters being spaced apart, with each emitter being responsible for a number of storage areas on the storage medium;

wherein the plurality of the field emitters work in parallel to increase the data rate

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of the storage device.

46. (New) The device of claim 21, wherein the sensing module includes at least one of a chemical detector and an electrical detector.

47. (New) The device of claim 21, wherein an outer surface of the capsule is made of an inert material.

48. (New) The device of claim 21, further comprising a magnetic member, wherein the magnetic member permits manipulation of the capsule from a location outside the body.

49. (New) An ingestible data recorder medical device comprising:
a capsule including:
a sensing module for sensing a biologic condition within a body, wherein sensing the biologic condition includes receiving video of the biologic condition;
a recording module including:
a controller for performing one or more logical operations using the sensed biological condition, and
a storage device,
wherein the recording module is electrically coupled to the sensing module for selectively recording data representative of the sensed biological condition to the storage device based upon the logical operations.

50. (New) The device of claim 49, wherein the recording module includes programmable logic.

51. (New) The device of claim 49, wherein the capsule further includes a magnetic member to facilitate manipulation of the capsule from a location outside the body.

52. (New) An ingestible data recorder medical device comprising:
a capsule including:

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means for sensing a biological condition within a body, the means for sensing a biological condition includes a means for sensing images of the biologic condition;

means for storing the biological condition including an atomic resolution storage device; and

means for recording the biological condition to the means for storing the biological condition.

53. (New) The device of claim 52, wherein the means for recording the biological condition is configured to selectively record the biological condition to the means for storing the biological condition based upon predetermined parameters.

54. (New) The device of claim 52, wherein the means for sensing a biological condition includes a means for sensing at least one of a chemical condition or an electrical condition.

55. (New) The device of claim 52, further comprising:
means for positioning the capsule to obtain desired images from within the body.

56. (New) The device of claim 52, the means for recording comprises a video receiver.